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# The Market for Training Services: A Demand Experiment with Bangladeshi Garment Factories<sup>†</sup>

By ROCCO MACCHIAVELLO, ATONU RABBANI, AND CHRISTOPHER WOODRUFF\*

Raising productivity in large factories is increasingly seen as an important channel to foster growth and alleviate poverty. Bloom et al. (2013) show that an intensive, and expensive, consulting program substantially increases productivity in a sample of textile factories in India. But many programs, often publicly supported with aid money, offer less intensive and less expensive training and consulting services for workers and floor managers. The sustainability of these consulting and training interventions rests on developing a market for these services.

We undertake an experiment to understand both the effectiveness of, and the demand for, a variety of training programs among large-scale garment manufacturers in Bangladesh. The project complements a well-developed recent literature on the effects of training programs for micro and small firms (see McKenzie and Woodruff 2014 for a review) and deepens our understanding of (the lack of) managerial capital in developing countries (see, e.g., Bruhn, Karlan, and Schoar 2010).

In this paper we report results from a pilot marketing experiment in which we explore the demand for a training program for line supervisors and the constraints that might prevent a market for training services from operating efficiently or even emerging at all. Beyond its intrinsic relevance, the Bangladeshi garment sector offers an ideal opportunity to study

demand for training. The market is huge: more than 3,000 exporting factories are believed to employ between 100,000 and 150,000 line level supervisors. The industry has now been around for almost three decades and many observers agree that deficiencies in managerial capital among line supervisors contribute to both low productivity and poor labor relations in the industry. These conditions, one would imagine, could lead to a potentially large demand for training services. Yet despite donors' activism, a proper market for training services has failed to develop: fewer than 10 percent of existing supervisors have received any formal training.

## I. Setup and Experiment

We partner up with a local service provider (LSP) to market a training program to garment factories. The curriculum of the training program was developed by local training centers and GIZ, the German Technical Cooperation Agency, with a long history and a good reputation in the sector. The training consisted of six days of training for existing line supervisors. Three modules with self-contained curricula were offered: production planning and processes (*P*), processes to enhance quality (*Q*), and HR practices, leadership, and social compliance (*H*).

Using transaction-level customs records we constructed a sample of 632 exporters in Dhaka.<sup>1</sup> We matched the names of the factories with a number of directories to obtain contact details of the factories. We were able to find current contact information for 288 factories. Using the customs data, we also categorized factories

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<sup>1</sup>There are 1,433 exporters operating in Dhaka for the relevant period. We trimmed the sample to focus on exporters accounting for 95 percent of exports volumes across all products in the 27 largest destination markets. We excluded exporters we had worked with to evaluate the training programs.

as above or below median according to three characteristics: size (measured in export revenues), quality of buyers sourcing from the factory (a weighted average of unit prices paid by buyers in the market), and quality (the residual of a simple logit demand estimation).<sup>2</sup>

Working with the LSP and GIZ, we produced a high-quality bilingual brochure and professional video describing the training program. Each factory was then approached by phone by a trained member of staff working for the LSP. A trained enumerator recorded information from the phone call and from the overall marketing process.

Factories were told that the LSP was running a campaign to increase awareness of its training services, offering training at a discount. Each factory was offered to purchase slots in training sessions at randomly selected prices. The offered prices ranged from approximately 60 percent to 100 percent of the estimated full cost of offering the program. In addition, the factories were offered a free slot in a randomly selected module ( $P$ ,  $Q$ ,  $H$ ) to allow them to test the suitability of the program.<sup>3</sup>

## II. Results

We are interested in three main outcomes: (i) whether, conditional on establishing contact with the factory, the factory accepted an offer to send additional information by mail; (ii) whether the factory took up the free slot, (iii) questions raised by factories and reasons for refusing the additional information and/or the free slot offer.

### A. Demand for Additional Information on the Training Program

Table 1 reports results. A factory is considered to have been reached only if we could deliver the sales pitch to a decision manager—henceforth, DM—typically the HR manager. Out of 288 firms in the sample, we reached 183 DMs and delivered the pitch in 135 cases. Column 1 shows that, although the chance of being reached

is slightly higher when the free slot is offered in the  $Q$  model and is lower for large firms, the treatment variables and the firm's characteristics do not jointly predict whether a firm was reached or not ( $F$ -test 1.46,  $p$ -value 0.19). Consequently, the remainder of the analysis focuses on the 135 firms we reached.<sup>4</sup>

Columns 2 to 4 consider whether the factory asked to be sent additional information on the training. Of the 135 reached factories, 120 requested additional information. Column 2 shows that the modules  $P$  and  $Q$  have a 15 percent higher chance of leading to a request for additional information. The effect of price is negative, but small and very far from being statistically significant.

Column 3 explores interactions between the price offered and the module offered for the free slot. We find a negative elasticity of additional information being requested with respect to prices when the  $H$  module is offered, but not when the  $P$  and  $Q$  modules are offered.

Column 4 explores the interactions between the price offered and firm characteristics. There is a negative elasticity with respect to prices, but not for firms that are larger or that have higher quality buyers.

In sum, the first stage of the marketing reveals that there is a lower and more elastic potential demand for the training module in HR practices and social compliance and a somewhat less elastic demand for larger firms and firms exporting to higher quality buyers.

### B. Take-Up of the Free Slot

The marketing material was sent to the 120 factories that demanded additional information. In a follow-up phone call, we tried to re-establish contact with the factories to offer up the free slot.

Columns 5 to 8 report the results. Out of the 120 factories that requested additional information, we were able to have a second

<sup>2</sup>Further details on these variables are available upon request.

<sup>3</sup>Since the training is conducted outside the factory at facilities run by the LSP, the free module was intended to allow factories to learn not only about the "quality" of the training, but also about other practical aspects, such as convenience of the location and teaching hours.

<sup>4</sup>For the factories with whom we could reach a decision-maker but couldn't deliver the pitch, the main reasons were (multiple codes allowed): 33 percent decision-maker is too busy, 35 percent cases we were referred elsewhere, 7 percent of cases the call dropped for technical reasons, 3 percent pitch was interrupted, 17 percent not interested, 22 percent other sparse reasons (e.g., manager is on a trip, training curriculum not relevant for the factory, etc.)

TABLE 1

	Initial call				Follow-up call			
	Reached (1)	(2)	Info requested (3)	(4)	Reached (5)	Free slot take-up		
					(6)	(7)	(8)	
Price	0.0097 (0.0146)	-0.0201 (0.0128)	-0.0800 (0.024)***	-0.0547 (0.0261)**	0.023 (0.020)	0.020 (0.014)	0.024 (0.015)	0.019 (0.020)
Module <i>P</i>	0.0525 (0.0711)	0.1506 (0.066)**	-0.8032 (0.3562)**	0.1485 (0.0657)**	0.202 (0.102)**	0.009 (0.070)	-0.019 (0.081)	-0.030 (0.109)
Module <i>Q</i>	0.138 (0.072)*	0.161 (0.064)**	-0.6720 (0.3493)*	0.1457 (0.0647)**	0.064 (0.100)	0.0503 (0.0686)	0.0275 (0.0790)	0.0570 (0.115)
Higher demand	-0.0628 (0.0587)	-0.0844 (0.0528)	-0.0860 (0.0516)*	0.092 (0.280)	-0.078 (0.082)	-0.043 (0.056)	-0.032 (0.063)	-0.051 (0.088)
Better buyers	0.0359 (0.0588)	0.0588 (0.0527)	0.0525 (0.0514)	-0.4125 (0.2809)	0.117 (0.081)	0.038 (0.056)	0.031 (0.063)	0.027 (0.088)
Larger firms	-0.1062 (0.0586)*	0.0709 (0.0528)	0.0664 (0.0517)	-0.3472 (0.2814)	0.159 (0.082)*	0.112 (0.056)**	0.112 (0.062)*	0.121 (0.086)
Module <i>P</i> × price			0.0866 (0.032)***					
Module <i>Q</i> × price			0.0760 (0.0316)**					
Higher demand × price				-0.0153 (0.0253)				
Better buyers × price				0.0430 (0.0255)*				
Larger firm × price				0.0376 (0.0255)				
<i>F</i> -test	1.46	2.73	3.20	2.42	2.25	1.38	1.20	0.75
Adjusted <i>R</i> <sup>2</sup>	0.01	0.07	0.12	0.09	0.05	0.02	0.01	-0.02
Observations	288	135	135	135	135	135	120	86

Notes: Price is randomly offered price (either 8,500, 9,250, 11,625 or 14,000 Bangladeshi Taka (1 US \$ = 78 BDT)). Module *P* (production processes) and *Q* (quality control) refer to randomly offered free-slot (omitted category module *H*, human resources and social compliance). Higher demand = 1 if the firm is above the median in the sample w.r.t. a residual from a logit demand estimation (details available upon request). Better buyer = 1 if the firm is above the median in the sample w.r.t. a weighted average of the unit prices paid by its buyers in the market. Larger firms = 1 if the firm is above the median w.r.t. export revenues in the sample. Column 1 is on the whole sample. Columns 2–6 are on the sample of firms that were reached. Column 7 is on the sample of firms that requested information after the first call. Column 8 is on the sample of reached firms among those.

\*\*\*Significant at the 1 percent level.

\*\*Significant at the 5 percent level.

\*Significant at the 10 percent level.

conversation with only 86. There is evidence that decision-makers could be more easily reached when the free-module offered was *P* and in larger factories. Although the linear relationship is not statistically significant, higher prices tend to be associated with a higher likelihood of being able to talk again with the decision-maker (column 5). Only 16 factories—19 percent of those reached on the second call, but less than 6 percent of the initial sample—took up the free slot. Columns 6 to 8 explore drivers of the decision to take-up the free slot on the sample of factories we could contact with the first call (column 6), the sample requesting additional information (column

7), and the sample we were able to contact at follow-up (column 8). In all specifications we find no effect of the treatment variables, including prices, on take-up of the free slot. There is some indication that larger firms are more likely to take-up the free slot.

### C. Points of Discussion, Questions, and Reasons for Rejecting the Offer

Throughout the process, we recorded the points of discussion, the questions raised, and the reasons given for turning down an offer. We have records for 135 conversations during the first call and for 78 conversations at follow-up.

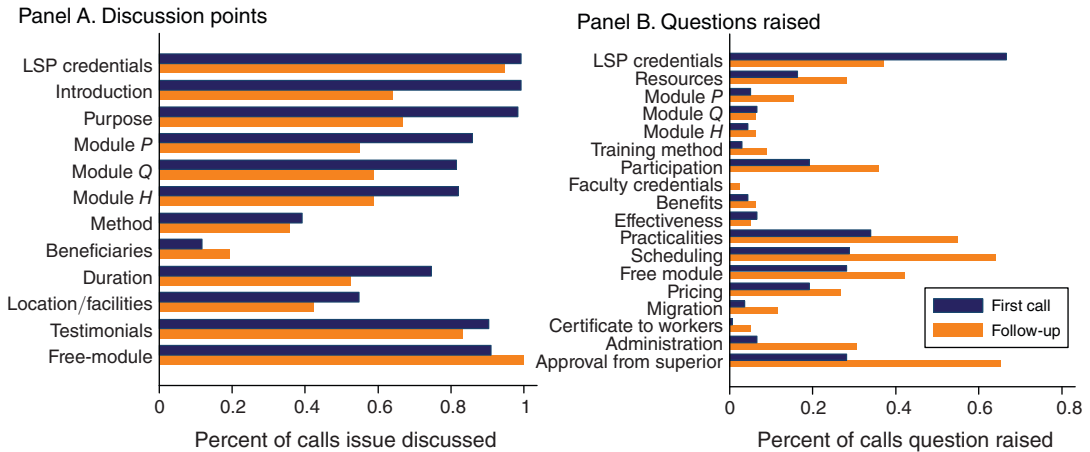


FIGURE 1

*Notes:* The figure describes Discussion Points (panel A) and Questions Raised (panel B) during 135 completed first call and 86 completed follow-up calls. Both Discussion Points and Questions Raised had been pre-classified into the reported categories following extensive piloting.

*Points of Discussion.*—Figure 1, panel A, describes the points of discussion in both the first and follow-up calls. We code 12 aspects we intended to cover during the sales pitch. These include, among others, introduction to the local service provider, the curriculum of the various modules, discussion of the initial free slot offer, as well as other practical details. The figure shows that, while the essential information was covered in almost all calls, intended beneficiaries and the training method were less likely to be covered. Significantly less information was exchanged during the follow-up call than in the initial call.

*Questions Raised.*—We also recorded the questions asked during these conversations by the factories (see panel B of Figure 1). Two patterns emerge. First, with the exception of questions pertaining to the credentials of the local service provider, many more questions were asked in the follow-up call than in the introductory call.<sup>5</sup> Second, relative to practicalities and administrative issues, questions regarding curriculum of modules offered or even pricing were less common.

<sup>5</sup>This is not entirely driven by less interested factories dropping out at follow-up: the comparison holds true when conditioning on factories reached at follow-up.

In general, phone calls in which more questions were raised are far more likely to result in a positive outcome: a request of information during the first call and taking up the free slot at follow-up. This is true not just considering all questions taken together, but also for specific dimensions. For example, six types of questions (Participation, Practicalities, Scheduling, Free Module, Pricing, Approval from Superior) correlate with a positive outcome in the initial call, and eight dimensions (Resources, Module P, Training Method, Participation, Practicalities, Scheduling, Free Module, Administration) correlate with taking up the free slot at follow-up. There are two notable exceptions: questions about training certificates to be issued to workers and concerns over trainees leaving the factory once the training is completed correlate with a lower likelihood of a positive outcome at both stages.

In general, treatment variables (price and free module) and firm characteristics do not explain much of the variation in the number or type of questions raised during the initial or follow-up call. There is some evidence that firms supplying buyers paying higher prices asked fewer questions at both stages. A higher price leads to more questions at the follow-up stage (the correlation is negative, but not statistically significant at the initial call).

*Reasons for Rejecting the Offer.*—In general, scheduling a conversation with the decision-maker was difficult. In most cases (33 percent at first call and 87 percent at follow-up) the decision-maker was said to be too busy.<sup>6</sup> For 40 firms, we were able to code the reasons for definitively rejecting the offer at either the initial call (15 firms) or at follow-up (25 firms). For simplicity, we bundle the responses at the two different stages. The following reasons, ranked by importance, were mentioned as the reason the additional information or free slot was turned down: (i) production pressure is too high (25 percent); (ii) factory is unable to spare supervisors (20 percent); (iii) DM does not believe training would be effective (15 percent); (iv) the factory is unwilling to train supervisors outside its premises (15 percent); (v) migration concerns, i.e., trained supervisors will leave the factory after completing the training (10 percent); (vi) training is too long. It is interesting to note that only two factories (coded as selling to higher quality buyers) mentioned they already offered training to supervisors and only one factory mentioned the training was too expensive. Conditional on refusal, factory characteristics do not explain much of the variation in the reasons given for turning down the free slot.

### III. Conclusions

We set out to market a training program for lower level managers (line supervisors) to large factories in the Bangladeshi ready-made garment industry. The program was offered by an established local service provider and developed by a reputable technical cooperation agency with a long experience in the industry. The program was tailored to the needs of garment factories, as assessed during the enrollment phase of a different program that trained predominantly female line operators to become line supervisors (see Macchiavello, Menzel, and Woodruff 2014).

A number of results emerge. First, take-up of the program—even for a free slot—was very low. Qualitative information coded during the initial interactions with the factories, suggests that intense production pressures are an important reason for the low demand. High production

pressures are somewhat intrinsic to the industry in which just-in-time, short lead-time, and reliability in deliveries are key sources of comparative advantage, but are exacerbated by an environment characterized by frequent shocks. Managers high up in the factory hierarchy, such as Human Resource Managers, then, appear to be engaged in constant fire-fighting.

Second, take up of the program appears to be quite insensitive to pricing. Since we did price the program close to a commercially viable rate, this suggests that, in principle, it could be possible to develop a market for such training services—provided they could be proved to be effective.

Third, there appeared to be higher interest in and demand for training modules aimed at improving production processes and quality, rather than human resources and social compliance—despite the fact we marketed the program mostly to human resource managers. Evidence is lacking on the relative merits of these two types of programs. A priority for future research is to assess how the demand for this type of program is influenced by experience with the program as well as with more rigorous information on their effects. Research to evaluate the effects of this training program on a sample of comparable factories is currently underway.

### REFERENCES

- Bloom, Nicholas, Benn Eifert, Aprajit Mahajan, David McKenzie, and John Roberts.** 2013 “Does Management Matter? Evidence from India.” *Quarterly Journal of Economics* 128 (1): 1–51.
- Bruhn, Miriam, Dean Karlan, and Antoinette Schoar.** 2010. “What Capital is Missing in Developing Countries?” *American Economic Review* 100 (2): 629–33.
- McKenzie, David, and Christopher Woodruff.** 2014. “What are we Learning from Business Training and Entrepreneurship Evaluations around the Developing World?” *World Bank Research Observer* 29 (1): 48–82.
- Macchiavello, Rocco, Andreas Menzel, and Christopher Woodruff.** 2014 “Managerial Capital and Productivity: Evidence from a Training Program in the Bangladeshi Garment Sector.” <http://igc.soapboxserver.co.uk/wp-content/uploads/2014/10/Macchiavello-et-al-2014-Working-Paper.pdf>.

<sup>6</sup>The lower percentage in the initial call is explained by the fact that many calls had to be used to locate the appropriate decision-maker.